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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,165	05/01/2001	David A. Atkinson	LTI-PI-355	5640

7590 12/19/2003

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EXAMINER

GURZO, PAUL M

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/847,165

im
Applicant(s)

ATKINSON ET AL.

Examiner

Paul Gurzo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-5, 12, 15, 17, 20-22, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrien, Jr. et al. (6,326,616), and further in view of Wesley (4,458,153).

Regarding claims 1, 15, 20-22, 31, and 32, 616 teaches a spectrometry analyzer source comprising an electrically conductive conduit (4), with a discharge end, to receive the sample and an electrically conductive reference device (3) positioned proximate the discharge end of the conduit to allow an electrical potential to be established (col. 6, line 39 - col. 4, line 4 and Fig. 1). They teach that the mass analyzer employed in the spectrometer (col. 12, lines 60-61 and claims 14 and 15), and it is well known in the art that the spectrometer can be used because ion mobility and atmospheric pressure ionization mass spectrometers are well known in the art. They teach the vaporization and ionization of at least some of the sample (col. 17, lines 42-50). While it is implied that this happens simultaneously, they do not explicitly state this. However, 153 states that a spark gap across the electrodes releases a large quantity of energy in a small area that instantaneously vaporizes and ionizes everything in the arc. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Lewis et al. so that this happens simultaneously to increase efficiency.

Regarding claims 3, 12 and 17, 616 teaches a corona discharge needle (206) (col. 17, lines 43-50 and Fig. 8), and it is obvious that this is in response to a sufficient potential maintained between the conduit and the reference device.

Regarding claims 4 and 5, 616 teaches that the electrodes must be properly insulated (col. 2, lines 22-30), and 153 teaches a field generating means disposed adjacent a nonconductive portion of the flow conduit (13), and Fig. 1 shows the claimed opening (col. 3, lines 48-51 and Fig. 1).

Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrien, Jr. et al. (6,326,616) in view of Wesley (4,458,153), and further in view of Kamo et al. (4,028,617).

While it is known that proper working order will only be achieved through accurate placement of the reference device, the above-applied art is silent to the claimed Paschen distance. However, 617 teaches that the spark discharge that arises between the gap of the two electrodes conforms with Paschen's Law (col. 1, lines 27-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the reference device at a distance greater than Paschen's distance so that the proper potential can be maintained.

Claims 6, 23-26, and 33-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrien, Jr. et al. (6,326,616) in view of Wesley (4,458,153), and further in view of Liang et al. (5,081,397).

Regarding claim 6, the above-applied art does not state the claimed metal, but 397 teaches the use of stainless steel electrodes (12) (col. 6, lines 65-66, and Fig. 1). Therefore, it

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would have been obvious to one of ordinary skill in the art at the time the invention was made to use stainless steel to reduce undesired effects of arcing.

Regarding claims 23-26, they are obvious matters of design choice in view of the prior art and do not give rise to any new or unexpected results. As such, they are not given patentable weight.

Regarding claims 33-43, the above-applied art teaches the limitations as described above as well as a fluid delivery system (col. 1, lines 19-22), and 397 teaches that the potential between the electrodes is often high enough to cause arcing (col. 7, lines 23-26), and it is obvious that this arcing can be continuous.

Claims 7-11, 13, 14, 18, 19, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrien, Jr. et al. (6,326,616) in view of Wesley (4,458,153), and further in view of Spangler (6,407,382).

Regarding claims 7-10, 18, 19, and 27-30, 616 teaches the use of a potential generating means capable of maintaining the desired potential of the electrodes (col. 6, line 39 -col. 7, line 4), but they do not teach an electrical circuit to achieve these results. However, 382 teaches a solid-state circuitry for operation as well as a transistor switch to adjust the potential. The discharge is powered by a high voltage power supply (Abstract and col. 7, line 59 - col. 8, line 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an electrical circuit because it achieves much the same result as the prior art and is merely a design choice.

Regarding claims 11, 13, and 14, 616 teaches electrically grounding the conduit (col. 6, lines 55-64), and 382 teaches that the cathode is connected to the low side of the potential, which

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serves as a floating ground (col. 4, lines 17-20). 382 also teaches that the electrodes may be rings or grids (col. 8, lines 34-36).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Blake (5,554,854)

Blake (5,633,506)


Partlo (6,051,841)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG
December 2, 2003


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800